CLAIM AMENDMENTS

1-60 (canceled)

61. (new): A method of recommending items to users from a database of items, the method comprising:

maintaining item selection histories of each of a plurality of users of a server system that provides functionality for browsing and selecting items from an electronic catalog of items;

collectively analyzing at least the item selection histories of the plurality of users, as collected over a period of time, in an off-line processing mode to generate a plurality of data values that represent degrees to which specific items in the electronic catalog are related;

storing selected data values of the plurality of data values in a mapping structure that maps items to related items; and

for each of a plurality of users of the electronic catalog, using the mapping structure, including the data values stored therein, to generate personalized recommendations of items within the catalog.

62. (new): The method of Claim 61, wherein the personalized recommendations are generated substantially in real time.

63. (new): The method of Claim 61, wherein generating the mapping structure comprises storing the mapping structure as a B-tree data structure.

64. (new): The method of Claim 63, wherein the B-tree data structure includes the data values of selected pairs of related items.

65. (new): The method of Claim 61, further comprising replicating the mapping structure, together with associated executable code used to generate personalized recommendations, across multiple machines of said server system to improve real time performance.

66. (new): The method of Claim 61, further comprising using the data values to identify items that are sufficiently related to be mapped within the mapping structure.

67. (new): The method of Claim 61, wherein collectively analyzing the item selection histories comprises generating a data value that indicates a degree to which a first item and a

second item are related, wherein the data value is dependent upon at least (a) a number of users that selected both the first item and the second item, (b) a total number of users that selected the first item, and (c) a total number of users that selected the second item.

68. (new): The method of Claim 67, wherein the data value is generated substantially according to the equation X / (SQRT (Y x Z)), where X is the number of users that selected both the first item and the second item, Y is the total number of users that selected the first item, and Z is the total number of users that selected the second item.

69. (new): The method of Claim 61, wherein collectively analyzing the item selection histories comprises generating a data value that indicates a degree to which a first item and a second item are related, wherein the data value is dependent upon at least (a) a number of users that purchased both the first item and the second item, (b) a total number of users that purchased the first item, and (c) a total number of users that purchased the second item.

70. (new): The method of Claim 61, further comprising repeating the step of collectively analyzing the item selection histories periodically using a most recent set of item selection history data.

71. (new): The method of Claim 61, wherein each item selection history is a history of items selected for purchase by a user.

72. (new): The method of Claim 61, wherein each item selection history is a history of items selected for viewing by a user.

73. (new): The method of Claim 61, wherein generating personalized recommendations comprises identifying a plurality of items selected by a target user to which personalized recommendations are to be provided, and using the mapping structure and data values stored therein to select, in real time, a set of additional items that are collectively related to the plurality of items.

74. (new): The method of Claim 73, wherein identifying a plurality of items selected by a target user comprises identifying items currently in an electronic shopping cart of the target user.

75. (new): The method of Claim 74, further comprising displaying at least some of the additional items on a shopping cart page that displays current contents of the electronic shopping

cart, such that the shopping cart page suggests additional items that may be of interest to the target user.

76. (new): The method of Claim 61, wherein generating personalized recommendations comprises identifying a plurality of items purchased by a target user, and using the mapping structure to select, in real time, a set of additional items that are collectively related to the plurality of items.

77. (new): The method of Claim 61, wherein generating personalized recommendations comprises identifying a set of items that have been viewed by the user during browsing of the electronic catalog, and using the mapping structure to select, in real time, a set of additional items that are collectively related to the set of viewed items.

78. (new): The method of Claim 61, wherein the personalized recommendations are generated and provided to a target user without requiring the target user to explicitly rate items or to create an input list of items.

79. (new): The method of Claim 61, wherein the personalized recommendations are generated and provided to a target user without requiring the target user to explicitly request recommendations.

80. (new): The method of Claim 61, wherein the personalized recommendations are generated and provided to a target user without requesting preference information from the target user.

81. (new): The method of Claim 61, wherein the personalized recommendations are generated for and provided to each of the plurality of users without updating the mapping structure.

82. (new): A computer system that performs the method of Claim 61 to provide personalized recommendations to users.

83. (new): A computer-implemented method of generating a mapping of items to related items, the method comprising:

maintaining item selection histories of each of a plurality of users of a server system that provides functionality for browsing and selecting items from an electronic catalog of items;

collectively and programmatically analyzing the item selection histories of the plurality of users to generate a data value that represents a degree to which a first item and a second item in the catalog are related, wherein the data value is dependent upon at least (a) a number of users that selected both the first item and the second item, (b) a total number of users that selected the first item, and (c) a total number of users that selected the second item; and

using the data value to determine whether the first item should be mapped to the second item in a mapping structure that maps items to related items.

84. (new): The method of Claim 83, wherein the data value is generated according to the equation $X / (SQRT (Y \times Z))$, where X is the number of users that selected both the first item and the second item, Y is the total number of users that selected the first item, and Z is the total number of users that selected the second item.

85. (new): The method of Claim 83, wherein the item selection histories identify items selected for purchase by the users, and the data value is dependent upon at least (a) a number of users that purchased both the first item and the second item, (b) a total number of users that purchased the first item, and (c) a total number of users that purchased the second item.

86. (new): The method of Claim 83, further comprising determining whether a given item should be recommended to a user based at least in part on a degree to which the given item is related to each of multiple items known to be of interest to the user, as indicated by the mapping structure.

87. (new): A system for generating real-time item recommendations, comprising:

a mapping structure stored in a memory of a server, said mapping structure mapping each of multiple reference items to a respective, limited-size set of related items determined to be the most closely related to the respective reference item, and storing data values indicating degrees to which each related item is related to its respective reference item; and

a computer process which runs on the server and uses the mapping structure to generate recommendations for users in real time based on items known to be of interest to such users.

88. (new): The system of Claim 87, further comprising a mapping structure generation process that collectively analyses item selections histories of users to measure degrees to which specific items are related, and which selects for each reference item a set of most closely related items to be linked to the respective reference item in the mapping structure.

89. (new): The system of Claim 88, wherein the item selection histories are user purchase histories maintained by a server system that supports online sales of the items.

90. (new): The system of Claim 87, wherein the mapping structure is stored in the memory of the server as a B-tree data structure.

91. (new): The system of Claim 87, wherein the mapping structure and the computer process are replicated across multiple servers of a web site system to handle loads.

92. (new): The system of Claim 87, wherein the computer process generates real time recommendations for users without updating the mapping structure.

93. (new): The system of Claim 87, wherein the computer process generates real time recommendations for users without requiring users to explicitly request recommendations.

94. (new): The system of Claim 87, wherein the computer process determines whether a candidate item should be recommended to a user based at least in part on a degree to which the candidate item is related to each of multiple items known to be of interest to the user, as reflected by data values stored in the mapping structure.

95. (new): The system of Claim 87, wherein the computer process determines whether a candidate item should be recommended to a user based at least in part on a degree to which the candidate item is related to each of multiple items currently in a shopping cart of the user.

96. (new): The system of Claim 87, wherein the computer process determines whether a candidate item should be recommended to a user based at least in part on a degree to which the candidate item is related to each of multiple items in an item viewing history of the user, as reflected by data values stored in the mapping structure.

97. (new): A computer-implemented method of recommending items to users of a server system that provides functionality for selecting items to purchase, the method comprising:

identifying a plurality of items that are currently in an electronic shopping cart of a target user;

identifying a set of additional items to recommend to the target user according to a selection algorithm in which a candidate item is considered for inclusion in the set based at least in-part upon a degree to which the candidate item is related to each of said plurality of items in the electronic shopping cart; and

recommending at least some of the additional items in the set to the target user while the plurality of items are in the electronic shopping cart.

98. (new): The method of Claim 97, wherein the method is performed substantially in real time when the target user accesses the electronic shopping cart.

99. (new): The method of Claim 97, wherein the degree to which the candidate item is related to each of the plurality of items is based at least in part on results of a programmatic correlation analysis of purchase histories of a plurality of users.

100. (new): The method of Claim 97, wherein the degree to which the candidate item is related to each of the plurality of items is based at least in part on results of a programmatic correlation analysis of item viewing histories of a plurality of users.

101. (new): The method of Claim 97, wherein the set of additional items is identified at least in part by retrieving, from a B-tree data structure, a related items list for each of the plurality of items.

102. (new): The method of Claim 97, wherein recommending at least some of the additional items to the target user comprises displaying representations of the additional items on a web page that displays contents of the electronic shopping cart.

103. (new): The method of Claim 97, wherein recommending at least some of the additional items to the target user comprises filtering out additional items that are included within a purchase history of the target user.